

Prob. Rules Review #1

(1) (a) 0.63 (b) $0.12/0.55 = 0.218$

(c) No. $P(A \cap B) \neq 0$

(d) No. $P(B|A) \neq P(B)$
 $0.218 \neq 0.20$

(2) $P(M \cup J) = 0.66$

(3) $P(O \cap H) = 0.1683$

4) (a) $P(A \cap B) = (0.23)(0.43) = 0.0989$

(B) $P(A \cup B) = 0.43 + 0.18 - 0.0989 = 0.511$

(5) D 9) B

(6) D 10) A

(7) B 11) E

(8) B

12) Sample space = 12 numbers

(a) {25, 29} (b) 2/12

(c) {26 -- 31} (d) 3/12

(e) 9/12 (f) 4/12

(g) 7/12

(h) {20, 21, 22, 23, 24, 25, 26, 29, 30}

13) (a) The two events must add to 100%

(b) The probabilities add to more than 100%
 $P(A^c) + P(A^c) = 1$

14) $P(A \cup B) = P(A) + P(B) - P(A \cap B)$

$0.7 = 0.3 + P(B) - 0.2$

$P(B) = 0.6$

15) $P(E) = 0.42$

$P(E \cap VT) = 0.27$

$P(VT|E) = \frac{P(VT \cap E)}{P(E)} = \frac{0.27}{0.42} = 0.643$

16)

$P(F) = 0.40$

$P(F \cap Sr) = 0.22$

$P(Sr|F) = \frac{0.22}{0.40} = 0.55$